

ABSTRACT

A motor drive unit capable of detecting the position of a stationary rotor of any type of sensorless motor, determining a proper startup logic for the rotor, and starting up the motor in a stable condition. To do this, multiple stator coils of the sensorless motor are supplied with rotor-position detecting drive voltages that are adapted to vary the middle point voltage of the multiple stator coils but do not rotate the motor. The middle point voltage of the stator coils is compared with a detection reference voltage. When the result of the comparison matches one of predetermined detection logic patterns, a proper startup logic is generated in accordance with the position of the rotor specified by the matching detection logic pattern to start up the motor. Otherwise, the detection reference voltage is changed in level, and a new rotor-position detecting signal is generated to repeat the procedure for detecting the rotor position.